NEW YORK STRUCTURAL BIOLOGY CENTER

Standard Operating Procedure For Work with Compressed Gases	Created: 07/11/2017 Reviewed: 07/11/2017

Chemical name/class: **Nitrogen, oxygen, hydrogen, argon, ethane** **CAS #:**

1. **Circumstances of Use:**

Compressed gases are used in a variety of circumstances at SEMC. Several pieces of equipment, including plunge freezers, require compressed nitrogen to operate. Plasma cleaning requires the use of hydrogen, oxygen, and argon gases. Argon and nitrogen are also used as inert gases in vacuum conditions.

2. **Potential Hazards:**

General:

- Gases are under high pressure and can potentially release with a great amount of force.
- Asphyxiation: Release of large amounts of gas can quickly displace atmospheric oxygen creating an asphyxiation hazard.
- Toxicity:
  - N/A

Reactivity:

- Ethane and hydrogen gases are highly flammable
- Oxygen gas is a strong oxidizer.

3. **Engineering Controls:**

- Gas canisters are attached to walls or permanent structures to prevent falling.
- Regulators are already connected and set to appropriate pressure. Users should not adjust regulator pressure.

4. **Work Practice Controls:**

- Only SEMC staff are move or connect gas cylinders.
- Contact SEMC staff in case of empty tanks or equipment not working
- Close tanks valves when not in use.

5. **Personal protective equipment (PPE):**

- Wear standard laboratory safety glasses.

6. **Transportation and Storage:**

- In-use tanks are attached to permanent structures.
- Tanks should only be moved by SEMC staff on dollies with tank cover on.
- When not in use, tank valves should be left closed.

7. **Waste Disposal:**

- SEMC staff will arrange return of empty tanks.

8. **Exposures/Unintended contact:**

- For symptoms of asphyxia such as headache, drowsiness, dizziness, excitation, excess salivation, vomiting or unconsciousness remove personnel to fresh air. Seek medical attention.
- If breathing is difficult, call 911 from any phone to request assistance. In the event breathing has stopped administer CPR. Seek medical attention.
- An incident report found at: http://www.nysbc.net/twiki/bin/view/Staff/IncidentReports should be completed within 24 hours. Follow-up medical attention should be sought.

9. **Spill Procedure:**

- N/A

10. **Training of personnel:**

All personnel are required to attend the New User Orientation session which includes the General Lab Safety session. This session includes an introduction to general laboratory safety at SEMC/NCCAT. All personnel shall read and fully adhere to this SOP for safe handling of compressed gasses the SDS, and shall document that they have read these documents by signing and dating the SOP.

"I have read and understand this SOP. I agree to fully adhere to its requirements."

Last	First	Signature	Date

